

FIG. 1

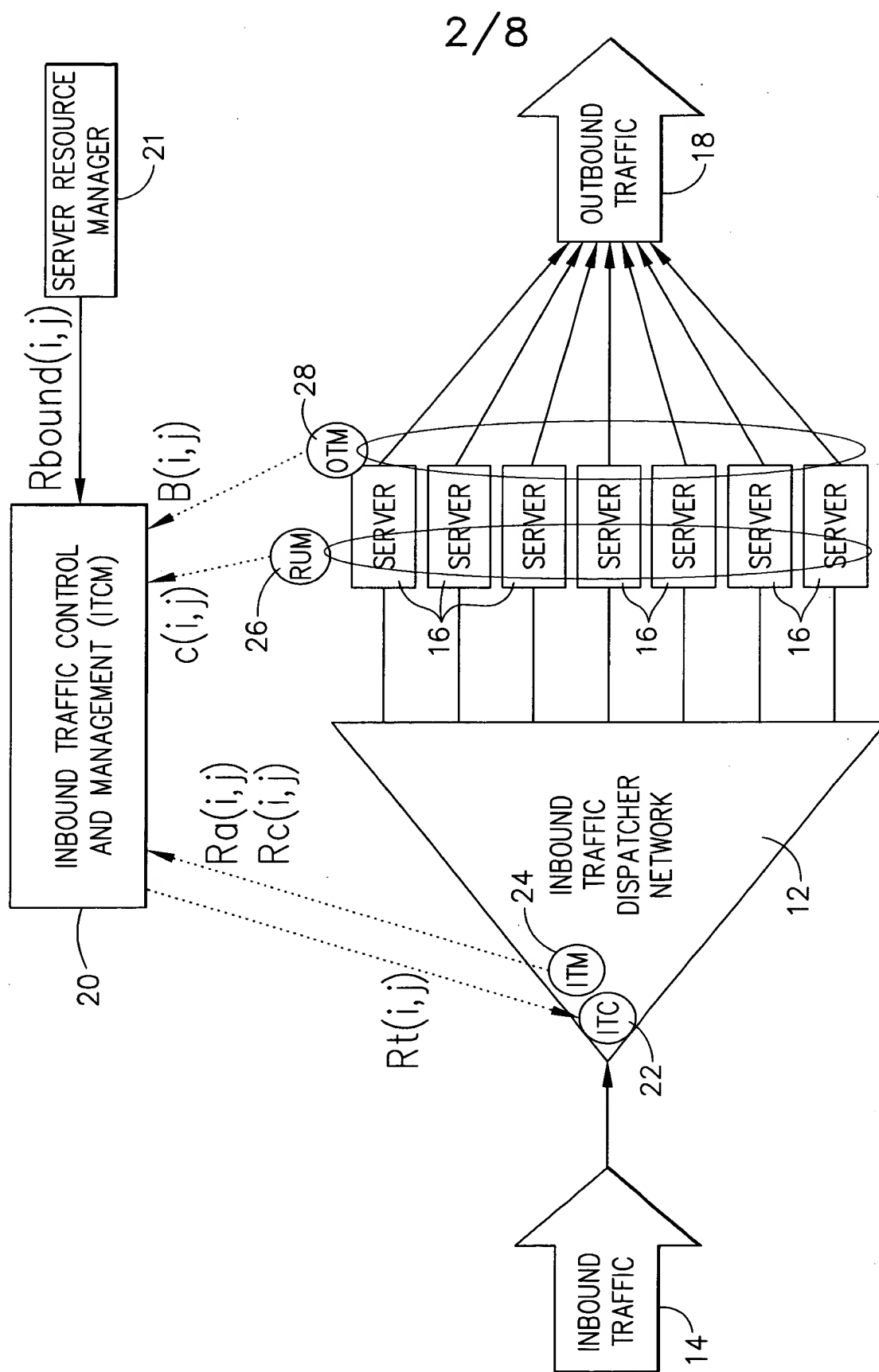


FIG. 2

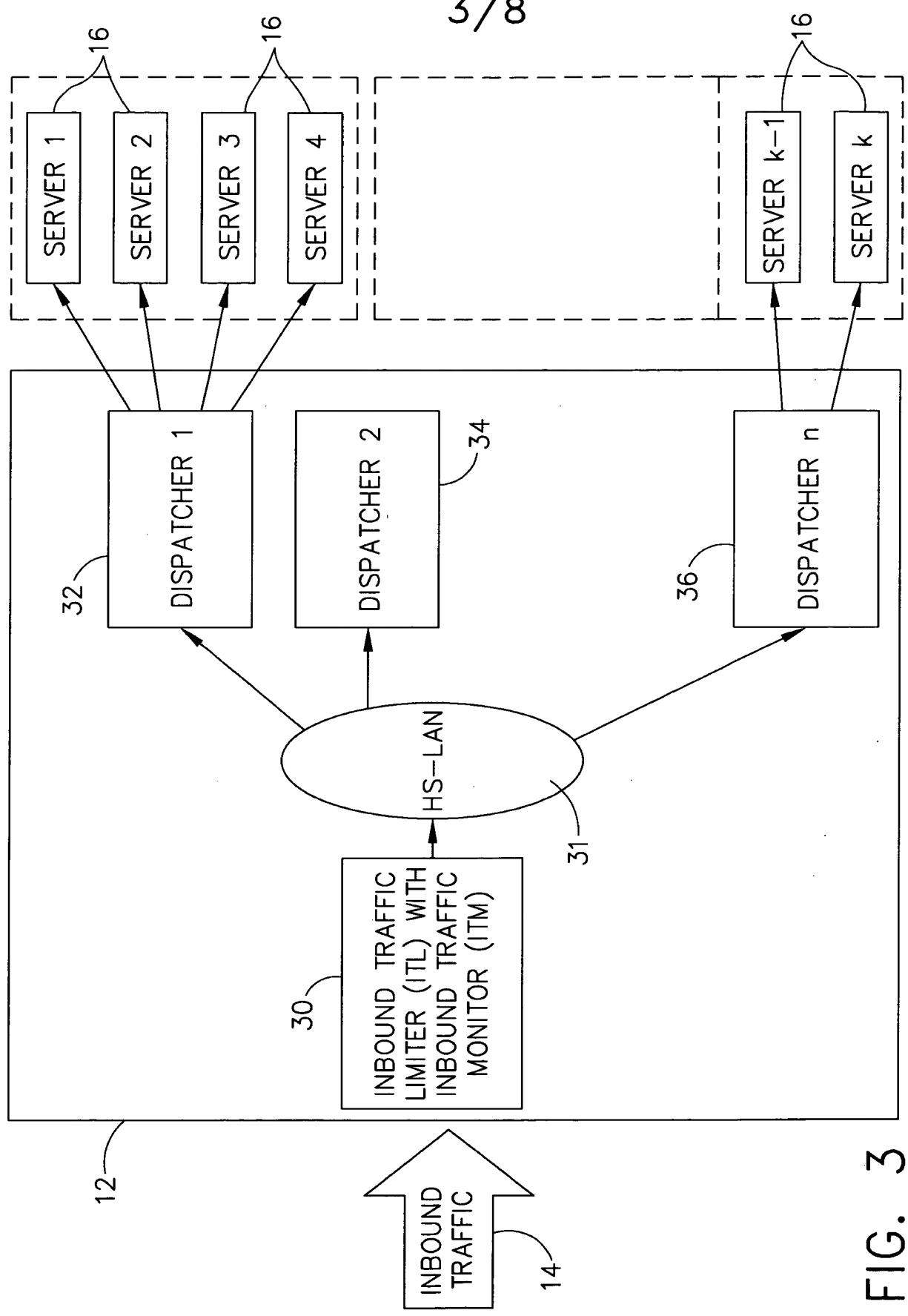


FIG. 3

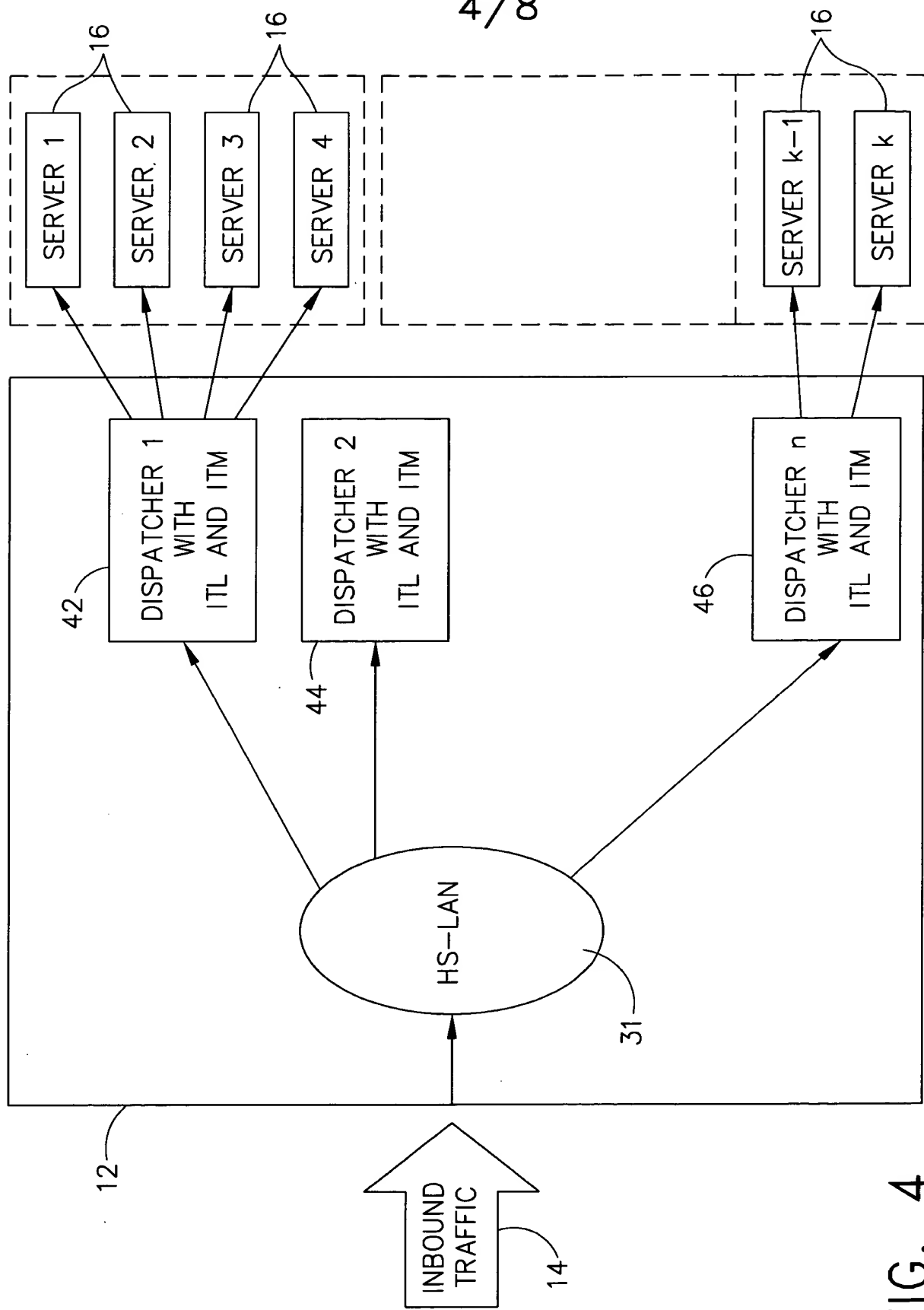


FIG. 4

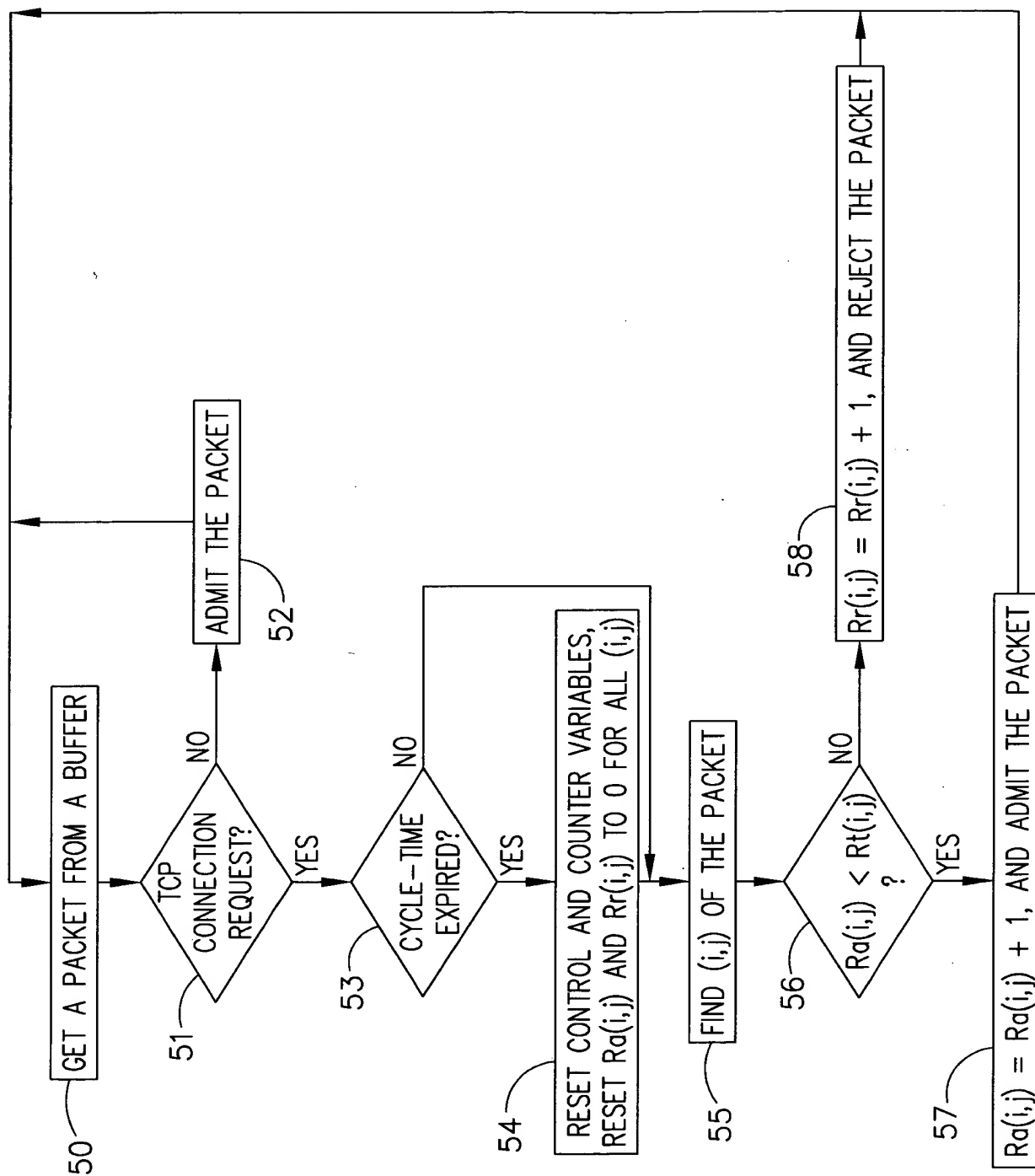


FIG. 5

STEP 1

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START:
FOR ALL (i,j), SET Bmax(i,j) = MIN (Bmax(i,j),
    Rbound(i,j)*b(i,j));
FOR ALL (i,j), SET Bt(i,j) = b(i,j)*Ra(i,j);
LET Bt BE THE SUM OF Bt(i,j) OVER ALL (i,j);
IF Bt>Btotal THEN GO TO STEP 2;
IF ((Rr(i,j)=0
    & Bt(i,j)<Bmax(i,j))) OVER ALL (i,j)
    THEN GO TO STEP 5; ELSE GO TO STEP 2;

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/* REFLECTING "EXTERNAL CONSTRAINT" Bbound(i,j) */
/* ESTIMATING THE CURRENT OUTBOUND TRAFFIC */
/* ESTIMATING THE CURRENT TOTAL
    OUTBOUND TRAFFIC */
/* LINK CONECTION DETECTED */
/* NO REQUEST REJECTION */
/* SLA IS NOT VIOLATED. "<="
    MEANS LESS-THAN-OR-EQUAL-TO */

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STEP 2

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COMPUTE_BANDWIDTH_TARGETS:
FOR ALL (i,j), SET Bt(i,j) = b(i,j)*Ra(i,j)+Rr(i,j);
LET Bt BE THE SUM OF Bt(i,j) FOR ALL (i,j);
FOR EVERY (i,j) SUCH THAT Bt(i,j)>Bmax(i,j)
    FIRST SET Bt = Bt-Bt(i,j)-Bmax(i,j)
    AND THEN SET Bt(i,j) =Bmax(i,j);
IF Bt <= Btotal
    THEN GO TO STEP1; ELSE GO TO STEP 3;

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/* COMPUTING NEW TARGETS FOR BANDWIDTH USAGE */
/* ESTIMATING OUTBOUND TRAFFIC WHEN ALL REQUESTS
    ARE ADMITTED */
/* THIS STEP IS NEEDED SINCE Bt(i,j) WERE JUST
    RE-COMPUTED */
/* WANTS TO GENERATE MORE THAN THE MAXIMUM SLA */
/* ADJUST EXPECTED TOTAL OUTBOUND TRAFFIC */
/* BOUNDING TRAFFIC BY MAXIMUM SLA */
/* NO LINK CONGESTION WILL BE ANTICIPATED */

```

FIG. 6A

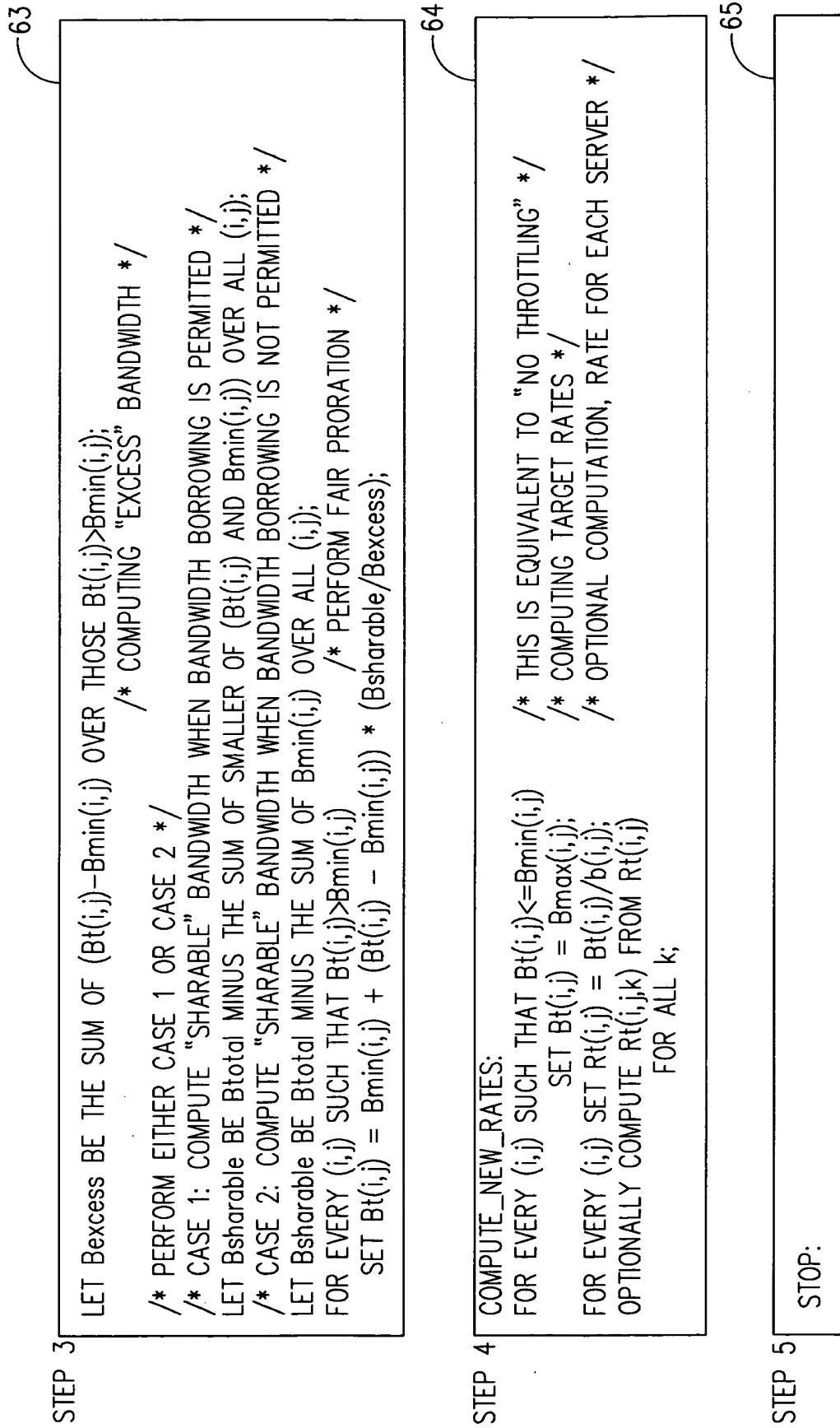


FIG. 6B

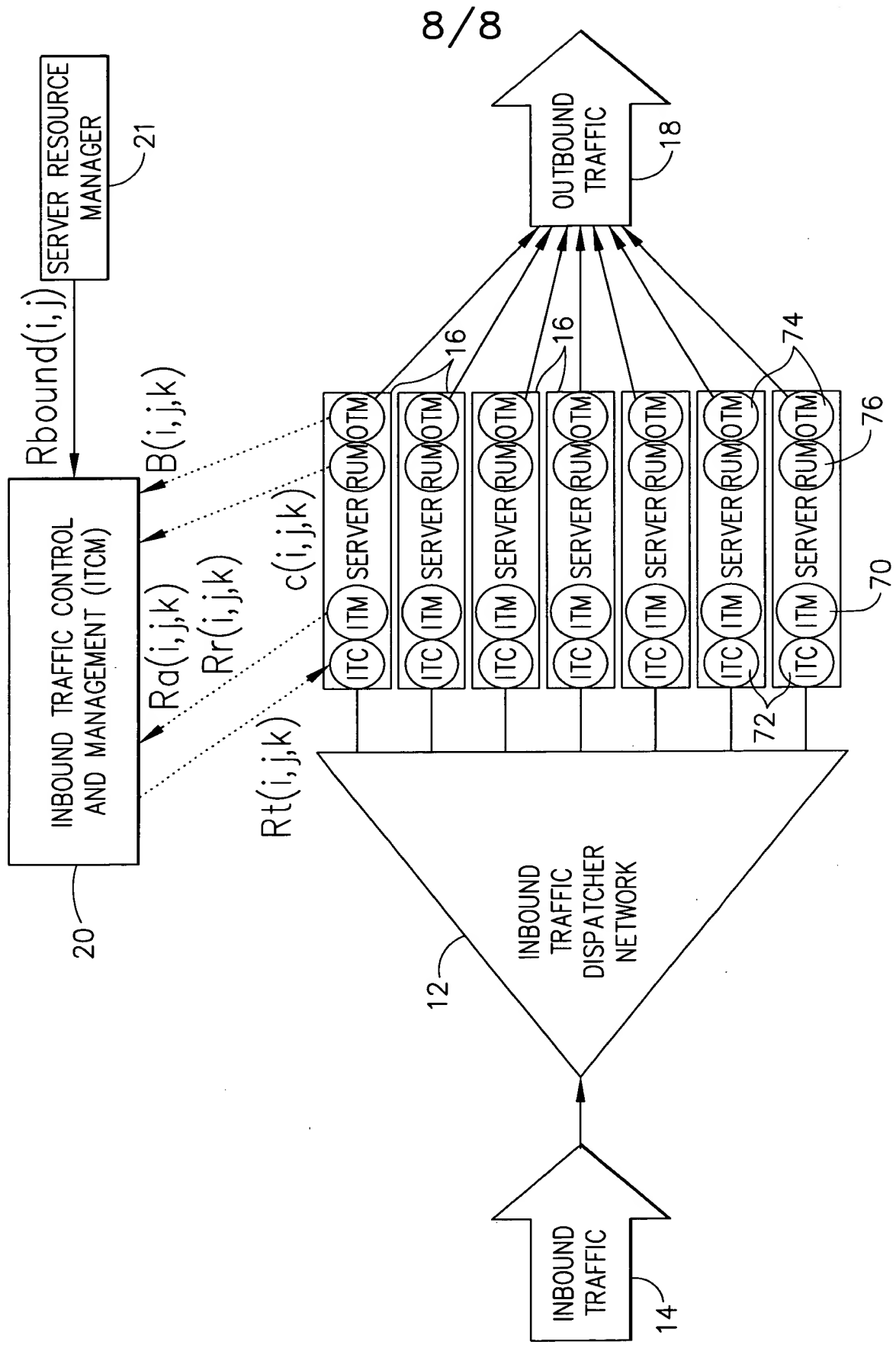


FIG. 7